Work Orden			÷	*925	556*					Page 1
Item ID: Revision ID: Item Name:	647.1813 Angle		• .	Accept	*N900	04010	<b>n</b> * s	etup Start Stop	*N *N	S1* S2*
Start Date: Required Date: Reference:	11/06/12 11/12/12	Start Qty: 2.00 Req'd Qty: 2.00	*2* *2*		Cust Item I Customer:	D:				
Approvals:	Process Pla	in: MLJ	Date: \2-\\-	つく Tooling: SPC (Y/N):		ate:	R	un Start Stop	ΞIZI	R1* R2*
Sequence ID/ Work Center II	<b>D</b> .	Operation Description		Set Up/ Run Hours	Tool ID	Tool # Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
<b>Draw Nbr</b> 647.1800	Rev	rision Nbr		0.00						
*110,* Waterjet FLOW CNC Waterj		Memo 1-Cut as per Dwg Rev: A Prog Rev:	2/C 2/C	0.00			_2	0		Jm/2-11-10
*120		2-Deburr if  QC2- Inspect parts off m		0.00			2	٥		Jm12-11-11
QC		Memo	*	0.00		•	,			- <del></del>

Quality Control

											DQA:	Date:	•
NCR: Yes / No WORK ORDER NON-CONFORMANCE / UPDATE										DATE			•
											QA Closed:	Date:	
Work Ord	or:					DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
WOIK OIG	CI.					Rework	۱ ٦		Skid-tube	Crosstube	1	Water Jet	Engineering
Part	No.					Scrap		r	Machining	Small Fab	4	d. Eng. Coor.	Quality
NCR	No.					Use-as-is Work Order Update	]	•	noforming Large Fab	Finishing Composite	Rec/Sto	re/Packaging Supplier	Other
Root					Descri	ption of work order update	П	nitial	Ac	tion	Sign &	[	
Cause		Date	Step	Qty	(	or Non-conformance	Ch	ief Eng	Desc	ription	Date	Verification	QG Inspector
Doc/Data													
Equip/Tooling													
Operator													
Material													,
Setup								۲,					
Other	Г		İ				1						
Process													
Supplier					l								
Training													
Unapproved													
			•		•	F	AUL	T CATE	GORY		·		
Landi	ing (	Gear				General		_			_		_
	L	Bending				Bend		Grain			Ovalized		Pressure/Forced
		Centre No	ot Concer	ntric to (	o/s	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure
		Cracks				Broken/Damaged		Inspecti	on Incomplete		Part Incorre	ct	Weld
		Crushed/	Crimped.			Burrs		Instruct	ions Incomplete/	'Unclear	Part Lost/M	issing	Wrong Stock Pulled
1		Cuffs				Contamination		Mainte	nance		Part Moved		_
		Heat Trea	it			Countersink		Mislabe	led		Positioned \	Wrong	
	Г	  Inspectio	n Strip in	Tube		Cut Too Short		Misread	I		Power Loss/	'Surge	Other

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Orde November-01-12	•			*925	56*						•	Page 2
Revision ID:	647.1813 Angle			Accept	*N900	<u>040</u>	100	)*	Setup	Start Stop	ı Vı	S1* S2*
	11/06/12	Start Qty: 2.00 Req'd Qty: 2.00	*2* *2*		Cust Item 1 Customer:	ID:						
Approvals:	Process Pla	n;	Date:	Tooling: SPC (Y/N):		ate:			Run	Start Stop		R1* R2*
Sequence ID/ Work Center II  130 *130* QC Quality Control	<b>)</b> .	Operation Description QC8- Inspect parts - second Memo	and check	Set Up/ Run Hours 0.00s	Tool ID	Tool#	Plan Code	Accep Qty	t Rej		Reject Number	Insp. Stamp
*140 *140* Brake NC Brake NC		Form as per dwg  Memo		0.00				2				
150 *150* QC		QC5- Inspect part complement	eteness to step on W/O	0.00 PAS 0.00 PAS 0.00 PAS	7			<u> </u>				

Quality Control

									DQA:	Date:	
NCR: Ye	s / No				WORK ORDER NON-C	ONFOR	MANCE / UP		QA Closed:	Date:	, *
Work Order:	:				DISPOSITION			AGAINST DE	PARTMENT/	PROCESS	
Part No NCR No					Rework Scrap Use-as-is Work Order Update	1	Skid-tube  Machining  noforming  Large Fab	Crosstube Small Fab Finishing Composite		Water Jet d. Eng. Coor. e/Packaging Supplier	Engineering Quality Other
INCK INO	)·		<del></del>		work Order Opdate		raige Fab	Composite		Supplier []	
Root				Descrip	otion of work order update	Initial	Act	tion	Sign &		
Cause	Date	Step	Qty	0	r Non-conformance	Chief Eng	Desci	ription	Date	Verification	QC Inspector
oc/Data											
quip/Tooling											
perator										·	
/laterial		1									
etup	]	İ				1,	.u.				

Landing (	Gear	General					•
	Bending	Bend	Grain		Ovalized	F	Pressure/Forced
	Centre Not Concentric to O/S	BOM/Route	Hardware		Over/Under tolerance		emperature/Cure
	Cracks	Broken/Damaged	Inspection Incomplete		Part Incorrect		Weld
	Crushed/Crimped.	Burrs	Instructions Incomplete/Unclear		Part Lost/Missing		Wrong Stock Pulled
	Cuffs	Contamination	Maintenance		Part Moved		
	Heat Treat	Countersink	Mislabeled		Positioned Wrong		
	Inspection Strip in Tube	Cut Too Short	Misread		Power Loss/Surge		Other
	Ripples in Bend	Drill Holes	Offset	-			
	Torque Waves in Extrusion	Drawing	Out of Calibration				
	Turning Sequence	Finish	Out of Sequence				
	Wave/Twist in Tube	Folio	Outside Dimensions				

**FAULT CATEGORY** 

Other
Process
Supplier
Training
Unapproved

				•						
Work Ord		·		*925	556*					Pagė 3
Item ID: Revision ID: Item Name:	647.1813 Angle			Accept	*N900	040	100	)* ፡	Setup Start	14771
Start Date: Required Date Reference:	11/06/12 e: 11/12/12	Start Qty: 2.00 Req'd Qty: 2.00	*2* *2*		Cust Item I Customer:	<b>ID:</b>				
Approvals:	Process Pl	lan:	Date:	Tooling:	D:	ate:	<u> </u>	I	Run Star	"NRT"
	QC:		Date:	SPC (Y/N):	D	ate:			Stop	*NR2*
Sequence ID/ Work Center 160 *160* Outsource4		Operation Description Outsource process-Anodi  Memo ISSUE P/O: HARD ANO	18583	Set Up/ Run Hours 0.00 0.00	Tool ID	Tool#	Plan Code	Accept Qty	Reject Qty	Reject Insp. Number Stamp
170 *170* Packaging		Receive & Inspect for Da	ımage & Mat'l Certs	0.00					43/01/	16 (2)

180

\*180\*

Packaging

Memo

QC5- Inspect part completeness to step on W/O

Quality Control

										DQA:	Date:	·
NCR: Y	es /	No				WORK ORDER NON-C	CONFOR	MANCE / U		QA Closed:	Date:	, ,
Work Orde	r:		·			DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
Part N NCR N	0					Rework Scrap Use-as-is Work Order Update	4 1	Skid-tube  Machining  moforming  Large Fab	Crosstube Small Fab Finishing Composite		Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root	1				Descri	ption of work order update	Initial	Α	ction	Sign &		
Cause	Da	ate	Step	Qty		or Non-conformance	Chief Eng	Des	cription	Date	Verification	QC Inspector
Doc/Data												
Equip/Tooling												
Operator												
Material										•		
Setup							<i>₹</i> ,	4				
Other							້ ວຸ	تسار				
Process							"					
Supplier												

Bend Grain Pressure/Forced Bending Ovalized BOM/Route Centre Not Concentric to O/S Hardware Over/Under tolerance Temperature/Cure Broken/Damaged Weld Cracks Inspection Incomplete Part Incorrect Crushed/Crimped. Part Lost/Missing Wrong Stock Pulled Burrs Instructions Incomplete/Unclear Cuffs Contamination Maintenance Part Moved Mislabeled Positioned Wrong Heat Treat Countersink Other Power Loss/Surge Inspection Strip in Tube Cut Too Short Misread Ripples in Bend Drill Holes Offset Torque Waves in Extrusion Drawing Out of Calibration Turning Sequence Finish Out of Sequence Folio Outside Dimensions Wave/Twist in Tube

**FAULT CATEGORY** 

General

Training Unapproved

**Landing Gear** 

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<b>Work Orde</b> November-01-12				*925	556*							Page 4
Item ID: Revision ID:	647.1813		·	Accept	*N900	<b>1</b> 040	100	<b>)*</b> s	-	tart	*N:	S1*
Item Name:	Angle								S	top	*N.	S2*
	11/06/12	Start Qty: 2.00	*2*		Cust Item							
Required Date: Reference:	11/12/12	Req'd Qty: 2.00	*2*		Customer							
Approvals:	Process Pl	an:	Date:	Tooling:		Date:	_	F		tart	*NI	R1*
	<b>QC</b> :		Date:	SPC (Y/N):	I	Date:			3	top	*N	R2*
Sequence ID/ Work Center II	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty		eject lumber	Insp. Stamp
190 <b>*190*</b> SprayPaint		Мето		0.00				a	_Ø_		<b>ø</b>	A 13-3-22
Spray Painting			/ MIL-P-23377J TYPE1	CLASS N AS PER DWG.	(SEE NOTE 2)							13.7.94
		CARDINAL	. 4860-50 PRIMER BAT	сн: <b>124204</b>								
<sup>200</sup> *200*		QC14- Inspect Spray Pai	nt .	0.00AC	Joules			(+Z	)			
QC Quality Control		Memo	•	0.00 8-23/								:
210		Identify as per dwg & St	ock Location: 5 B	59L 0.00				<b>S</b>				<u> </u>
*210* Packaging		Memo	• •	0.00				3				8

\*\*\*IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV\*\*\*

Packaging

		DQA:	Date:	
NCR: Yes / No	WORK ORDER NON-CONFORMANCE / UPDATE			. •

									QA Closed:	Date	:
Work Orde	er:				DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	*
Part N	No	,			Rework Scrap Use-as-is Work Order Update	The	Skid-tube  Machining rmoforming  Large Fab	Crosstube Small Fab Finishing Composite		Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root				Descri	ption of work order update	Initial	Ac	ction	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Chief En	g Desc	cription	Date	Verification	QC Inspector
Doc/Data											
Equip/Tooling											
Operator											
Material					•						
Setup							<u>}</u>		'		
Other .											,
Process											
Supplier											
Training											
Unapproved											
			<u> </u>		F	AULT CAT	EGORY				
Landi	ng Gear				General				•	_	_
	Bending				Bend	Grain			Ovalized		Pressure/Forced
	Centre N	Not Conce	ntric to C	D/S	BOM/Route	Hardv	/are		Over/Under	tolerance	Temperature/Cure
	Cracks				Broken/Damaged	_	ction Incomplete		Part Incorre	ct	Weld
	<del></del>	/Crimped	-		Burrs	Instru	ctions Incomplete/	/Unclear	Part Lost/Mi	issing	Wrong Stock Pulled
	Cuffs				Contamination	Main	tenance		Part Moved		
	Heat Tre	eat		<u> </u>	Countersink	Mislal	peled		Positioned V	Vrong	_
	Inspection	on Strip in	Tube	L	Cut Too Short	Misre	ad		Power Loss/	Surge	Other
	Ripples i	n Bend			Drill Holes	Offset					
	Torque \	Waves in E	Extrusion		Drawing	Out o	Calibration				
	Turning	Sequence			Finish	Out o	Sequence				
	Waya/T	wist in Tub	20	1	Folio	Outsi	la Dimanciano				

Work Ord November-01-1				*925	556*			Page 5
Item ID: Revision ID: Item Name:	647.1813 Angle			Accept	*N90004010	<b>0*</b> s		*NS1* *NS2*
Start Date: Required Date Reference:	11/06/12 : 11/12/12	Start Qty: 2.00 Req'd Qty: 2.00	*2* *2*		Cust Item ID: Customer:			
Approvals:	Process P	lan:	Date:	Tooling: SPC (Y/N):	Date:	R	Stop	*NR1* *NR2*
Sequence ID/ Work Center I 220 *270* QC Quality Control	ID	Operation Description QC21- Final Inspection	- Work Order Release	Set Up/ Run Hours 0.00	Tool ID Tool # Plan Code	Accept Qty	Reject Rej Qty Nur 13/4/	ect Insp. mber Stamp

13-4-10-

									DQA:	_ Date:	,
NCR: Y	es / No				WORK ORDER NON-C	ONFORM	MANCE / UPE	DATE			, &
									QA Closed:	Date:	
Work Orde	er:			<u> </u>	DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
Part N					Rework Scrap		Skid-tube Machining	Crosstube Small Fab		Water Jet d. Eng. Coor.	Engineering Quality Other
NCR N	lo				Use-as-is Work Order Update		noforming Large Fab	Finishing Composite	Rec/Sto	re/Packaging Supplier	Other
Root				Descri	ption of work order update	Initial	Act	ion	Sign &		
Cause	Date	Step	Qty	(	or Non-conformance	Chief Eng	Descr	iption	Date	Verification	QC Inspector
Doc/Data							"				
Equip/Tooling						:					
Operator											
Material [				,						1	
Setup											
Other											ļ
Process											
Supplier											
Training											
Unapproved											
					F	AULT CATE	GORY				
Landir	ng Gear				General			<u></u>			•
	Bending				Bend	Grain			Ovalized		Pressure/Forced
	Centre N	ot Conce	ntric to	o/s	BOM/Route	Hardwa	re		Over/Under	tolerance	Temperature/Cure
	Cracks				Broken/Damaged	Inspecti	on Incomplete		Part Incorre	ct	Weld
	Crushed	Crimped			Burrs	Instruct	ions Incomplete/U	Jnclear	Part Lost/M	issing	Wrong Stock Pulled
	Cuffs				Contamination	Mainte	nance		Part Moved		
	Heat Tre	at			Countersink	Mislabe	eled		Positioned V	Wrong	_
Γ	Inspection	n Strip in	Tube	Г	Cut Too Short	Misread	i		Power Loss/	'Surge	Other

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

Folio

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## **Picklist Print**

November-01-12 1:23:18 PM

Work Order ID:

92556

Parent Item:

647.1813

Parent Item Name:

Angle

**Start Date:** 11/06/12

Required Date: 11/12/12

Page 1

Start Qty: 2.00

Required Qty: 2.00

Comments:

IPP REV:A 12.10.03 NEW ISSUE DD VERE:JES

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
<b>M2024T3S.063</b> 2024-T3 .063 sheet		Purchased	No			110	sf	22.8200	0.088	0.1852632 O, J		****	Jmr2-
				<b>Location</b>		Loc Qty	<u>Lo</u>	c Code					
				MAT022		22.82							
				119	916	0.1			•				
				121	197	16.32							
				123	096	6.4			733	W96			

.

		DQA:	Date:	,
NCR: Yes / No	WORK ORDER NON-CONFORMANCE / UPDATE		<del></del>	, •
		0.4.01	<b>.</b> .	

										QA Closed:	Date	
Work Orde	r:				DISPOSITION				AGAINST DI	EPARTMENT,	/PROCESS	
Part N NCR N	o				Rework Scrap Use-as-is Work Order Update	Scrap Machining Small Fab Prod. Eng. Coor. Qual Jse-as-is Thermoforming Finishing Rec/Store/Packaging Oth				Engineering Quality Other		
Root				Descri	iption of work order update	ln	itial	Ac	tion	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Chie	ef Eng	Desc	ription	Date	Verification ·	QC Inspector
Ooc/Data  equip/Tooling Operator Material Setup Other Process Supplier Fraining Unapproved												·
Jilapproved		i	<u> </u>			AULT	CATE	GORY	<del></del>	1		.1
Landin	g Gear				General							
-	Bending Centre Not Concentric to O/S Cracks Broken/Damaged Crushed/Crimped. Bend BOM/Route Broken/Damaged Burrs		BOM/Route Broken/Damaged		Grain  Hardware  Inspection Incomplete  Instructions Incomplete/Unclear  Maintenance		Unclear	Ovalized Over/Under tolerance Part Incorrect Part Lost/Missing Part Moved		Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled		
<u> </u>	Heat Trea	at		<u> </u>	Countersink	$\vdash$	viainte Vislabe			Positioned V	Vrong	
	Inspectio		Tube		Cut Too Short	<del></del>	∕isread			Power Loss/	_	Other
	Ripples in	Bend			Drill Holes		Offset		_			
	Torque W	aves in E	xtrusio	n [	Drawing		Out of C	Calibration				
	Turning S	equence			Finish		Out of S	equence				
	Wave/Twist in Tube Folio				Outside Dimensions							

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r	ENGINEERING CHANGE NOTICE NO. 03686	SHEET 1 OF 2
APICAL	DWG NO. 647.1800 REV: N/C BY B. PETERS	DATE: 11/12/12 EFFECT ON DWG
INDUSTRIES, INC.	DWG TITLE: SHEETMETAL	
	APPROVED BY: ENGR GC MFG Dawn Barrer QC	EFF' CURRENT ORDER
TRANSACTION CODES (TC) A-ADD C-CREATE R-REVISE D-DELETE	REASON: REVISED RADIUS ON SHEETMETAL BEND.	D-12-020
		,

## NOTES:

MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4

FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N

- 3. DEBURR AND BREAK ALL SHARP EDGES
- 4. IDENTIFY IAW MPP-120

## **SHEET 1, ZONE A1 WAS:**

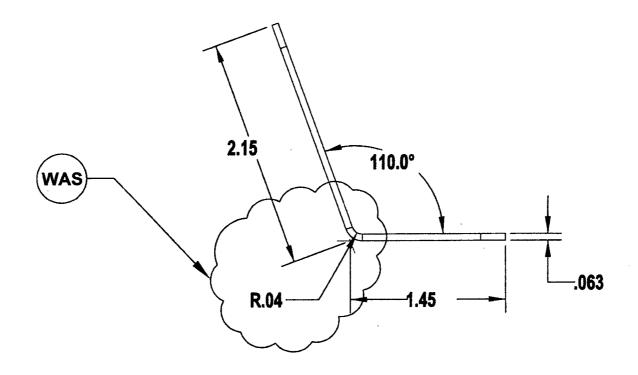
F/N TC PART NUMBER	QTY	DESCR	IPTION			MATERIAL		SPECIFICATION	
DOCUMENTS EFFECTED	□ RFMS [	⊐ MDL	□ INSTALL INSTRUC	☐ ICA	CHANGE D MAJOR	CATEGORY R 🖾 MINOR	DER RE	VIEW REQUIRED ES ⊠ N□	

APICAL INDUSTRIES, INC.

ENGINEERING CHANGE NO.

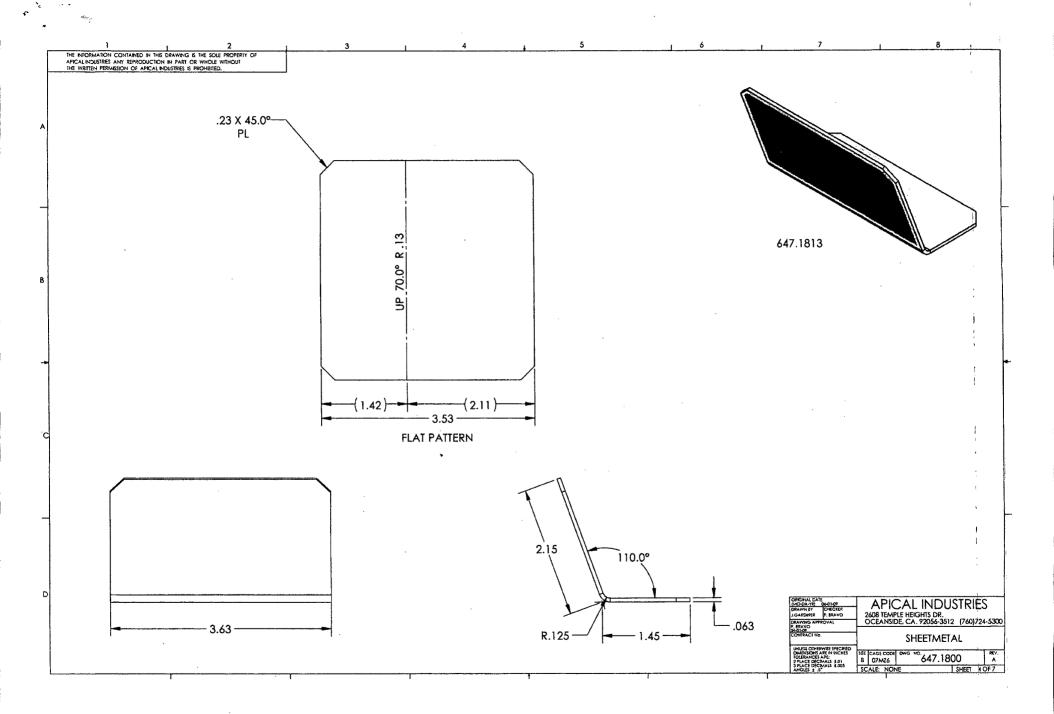
03686

SHEET 2 DF 2



**SHEET 4, ZONE D5 WAS:** 

QTY



DART AEROSPACE LTD	Work Order:	92556	
Description: Angle	Part Number:	647.1813	
<u> </u>			
Inspection Dwg: 647.1800 Rev: 20/C	<u> </u>	Page 1 of 1	

## FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
3.63° 3.54° 0.063°	H-0.010°	3.625	<u> </u>		V	Produtos
3.54"	11-0.010"	3.550"			V	
0063"	11-0.010"	0.063"	_		ν .	
0.23"x450	11-0.010" A65°	0.23'x 45°			U/ Prota	
					/	
	<b>-</b>			·		
				2	÷.	
<u> </u>						
	<u> </u>					
,						
					,	
						2.4
			€ SAR			

			~ C.	,	•	
Measured by:	Jm	Audited by:	./5 89	]	Preliminary Approval:	
Date:	12-11-10	Date:	12 11 12		Date:	

Rev	Date	Change		٠,		Revised by	Approved
E	10.04.14	Added preliminary appr	oval		4 , 2	KJ	

10.04.15



A.T.G. Industries Inc. 731, rue Industrielle Rd. PLATING DEPARTMENT Rockland, On K4K 1T2 Canada

Ph: (613) 446-4544 Fax: (613) 446-4556

Pack List

Ship To

DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY, ON K6A 1K7

To

DART AFROSPACE LID 1270 ABERDEEN ST. HAWKESBURY, ON, KOAJKT. Canada

Ph: 613-632-520	0 Fax: 613-632-1185	Ph: 613	-632-5200	Fax: 613-632-1185	
Terms		Ship Via			94
	Description				
lot	Part: ASST		Rev:		
	24 PCS 647.2510 PASSIVATE PER QQ-P-35				
	1 PC 647.1613 12 PCS 647.1712 3 PCS 647.1810 40 PCS 647.1813 4 PC 647.1816 20 PCS 646.3312 10 PCS 646.3714 40 PCS 646.3718 20 PCS 646.3811 6 PCS 647.7910 12 PCS 647.7910 12 PCS 647.7916 40 PCS 647.7916 40 PCS 647.9012 10 PCS 647.9013 19 PCS 647.9016 30 PCS 647.9016 30 PCS 647.9017 60 PCS 647.9017				
	HARD ANODIZE BLACK MIL-A-8625 TYPE III CLASS 2 Job: 20130027	PO: PO18583	Line:		
	•				,



A.T.G. Industries Inc. 731, rue Industrielle Rd. PLATING DEPARTMENT Rockland, On K4K 1T2 Canada

Ph: (613) 446-4544 Fax: (613) 446-4556

> Pack List Date: 14-Jan-13

> > Ship To

DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY, ON K6A 1K7 Canada

DARTAEROSPACE LTD 1270 ABERDIEEN ST HAWKESBURY, ON KSA 1K7 Canada

То

Ph: 613-632-520	Do Fax: 613-0	632-1185	Ph: 613-632-5200	Fax: 613-632-118	5
Terms		Ship V	ia	u .	
				- C. C. C. C. C. C. C. C. C. C. C. C. C.	
Quantity	Description	cate of Conformance		4	
			oment are in conformance		
	with all requirements, specif	ications and drawings	oment are in conformance referenced in the purchase ordered.	der.	
	ISO 9001 ATG SAL	: 2008 REGISTERED ES-2010 TERMS APF	) PLY		
	DATE: 14/1/13				:
		w			
	CERTIFIED SIGNATURE :				
	RECEIVER SIGNATURE : _				
			:		
					•
			,		
1					